

On a new species of *Lithobius* from Northern Spain

by

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INTRODUCTION

One of the authors (A.S.) has recently collected four specimens of *Lithobius* from three separate localities in the province of Huesca, northern Spain, which bear a superficial resemblance to *Lithobius erythrocephalus* C. L. Koch and have, in fact, been reported as such, although with the remark that they differ so much from this species as described from other parts of Europe that they may belong to a new form (Serra, 1980). These specimens have been critically re-examined and it has been decided that they belong to a new species of *Lithobius* which is described below.

Lithobius sexustumidus sp. nov.

(Figs. a to e)

Lithobius erythrocephalus: Serra, 1980: 256 (partim), fig. 35 a, b & c (non C. L. Koch, 1847).

?*Lithobius erythrocephalus*: Bröleman, 1920: 147.

TYPE LOCALITY: Ainsa, Huesca, Spain.

TYPE MATERIAL: Holotype, an adult female 9 mm long labelled «Col. Quilòpods. Reg. no. 405a Fl. L - 50a Loc. Ainsa, Huesca Leg. A. SERRA Dat. 30.IV. 1979» in coll. A. Serra. Paratypes. Same data as for holotype, an adult female. «Col. Quilòpods. Reg. no. 108a Fl. L - 50a Loc. Barbastro, Huesca Leg. A. SERRA Dat., 31-XII-1973», an immature male. «Col. Quilòpods. Reg. no. 42a Fl. L - 50a Loc. Lecina, Huesca Leg. A. SERRA Dat. 16.VII.1973», an immature female. Paratypes in coll. A. SERRA.

DERIVATION OF NAME: indicating the structure of the female gonopod.

DESCRIPTION OF ADULT FEMALES

Colour: dull brown.

Size: 8'5 and 9'0 mm long and 1'15 mm broad at T. 10.

Head: 0'90 and 0'95 mm broad, as broad as long, or a little broader, broader than T.3 but narrower than T.5; posterior marginal ridge without median thickening; paired posterior depressions fairly distinct; posterior border straight.

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Antennae: in the only specimen with intact antennae (holotype) about a third of body-length; of 41 and 42 articles, mostly transverse, the last equal in length to penultimate.

Ocelli: 1 + 7 and 1 + 9; posterior ocellus vertically oblong, much larger than those of the main mass (Fig. a).

Organ of Tömösváry: about the size of an average ocellus (Fig. a).

Prosternum: with 2 + 2 teeth, the line of their apices recurved; prodont setiform but stouter than a large seta, placed close to the lateral tooth; no obvious shoulder lateral to the prodont (Fig. b).

Tergites: smooth; T.1 narrower than T.3, approximately rectangular with posterior border straight; posterior border of T.3 straight, those of T.5, 8 and 14 slightly and those of T.10 and 12 moderately emarginate; posterior angles of large tergites rounded, those of T.9 and 11 obtuse or squared, those of T.13 with traces of projections (Fig. c).

Intermediate tergite: posterior border straight but very feebly lobed at either posterior angle.

Coxal pores: 2, 2, 2, 2; small, circular, separated from each other by more than their own diameter; medial pore on 12th coxa very small.

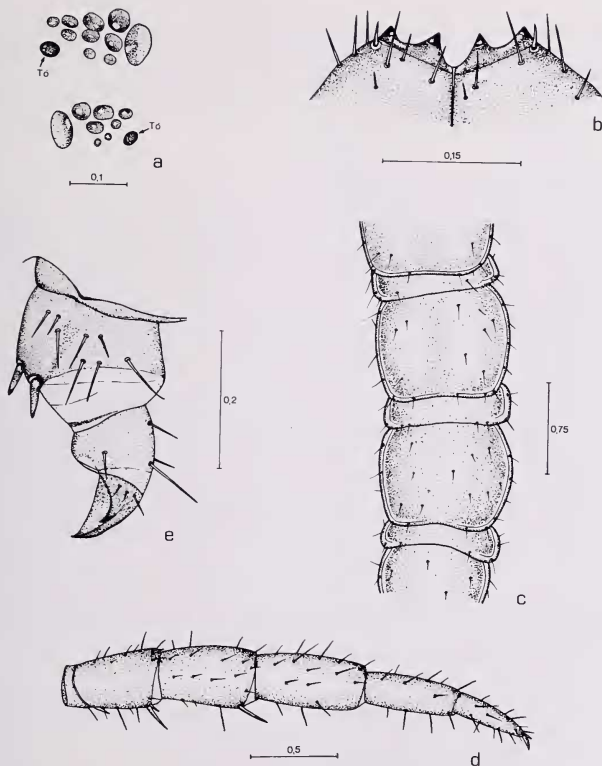
Tarsal articulations of anterior legs: distinct.

14th and 15th legs: moderately thickened; accessory apical claws well-developed on both legs; 15th rather less than a third of body-length (Fig. d).

Glandular pores: densely concentrated on 14th and 15th legs only.

Gonopod: with two subequal or rather unequal spurs, each from three to four times longer than broad when viewed ventrally; claw stout with a large lateral denticle but no medial denticle; the second article is markedly protuberant ventrally (Fig. e); dorsolateral setae more slender than general setae, two on the second article and, in the holotype only, one on the third; no dorsomedial setae.

Spinulation:	Ventral					Dorsal				
	C	t	P	F	T	C	t	P	F	T
1	—	—	—	—	m	—	—	—	a	a
2	—	—	—	(m)	m	—	—	(p)	a - p	a
3	—	—	—	(a)m	m	—	—	(p)	a - p	a
4	—	—	—	am	m	—	—	p	a - p	a - p
5	—	—	—	am	m	—	—	p	a - p	a - p
6	—	—	—	am	m	—	—	p	a - p	a - p
7	—	—	—	am	(a)m	—	—	p	a - p	a - p
8	—	—	(m)	am	am	—	—	(m)p	a - p	a - p
9	—	—	(m)	am	am	—	—	(m)p	a - p	a - p
10	—	—	m	am	am	—	—	(m)p	a - p	a - p
11	—	—	m	am	am	—	—	mp	a - p	a - p
12	—	—	mp	amp	am	—	—	(a)mp	(a) - p	a - p
13	—	m	(a)mp	amp	am	—	—	amp	p	p
14	—	m	amp	amp	m	(a)	—	(a)mp	p	p
15	(a)	m	amp	m	—	a	—	(a)mp	-	-

*Lithobius sexustumidus* sp. nov.

- Fig. a: ocelli and organ of Tomosváry (Tö).
 Fig. b: dental margin of prosternum, ventral.
 Fig. c: tergites 8 to 14, dorsal.
 Fig. d: 15th leg, medial (posterior).
 Fig. e: gonopod, lateral.

(The scales are expressed in millimetres.)

Letters in brackets indicate variable spines. In addition to these variations DpP is discontinuous in the holotype, being missing on the 9th leg and on the 8th and 10th being present on one side only.

Relations of length of articles of 15th legs:

femur x head	= 61·76 to 62·26 %
tibia x head	= 70·58 to 75·47 %
tarsus x head	= 56·60 to 59·80 %
tarsus x femur	= 90·90 to 96·82 %
metatarsus x head	= 41·50 to 47·05 %
metatarsus x femur	= 66·66 to 76·19 %

DESCRIPTION OF IMMATURE MALE

Size: 6·8 mm. long and 0·88 mm. broad at T.8 and 10 which are the same breadth.

Head: 0·74 mm. broad.

Antennae: 3·2 mm. long; of 34 articles, less transverse than in adults with the last article twice the length of penultimate.

Ocelli: 1 + 3, 2, 1; posterior ocellus oval, a little larger than those of the main mass.

Intermediate tergite: posterior border almost straight.

Coxal pores: 1, 2, 2, 1 + 1, 1, 2, 1.

14th and 15th legs: less obviously thickened than in adults with no special features; 15th 2·2 mm. long.

Genitalia: first genital sternite with about nine setae on either side; second genital sternite without setae; gonopod of a single article with one seta.

Spinulation: VaF starts on 5, DaP on 11 and DpP on 7, otherwise as in adults with 15 VaC present and 15 DaP absent.

Species with conspicuous modification of the male posterior legs, strong emargination of the male intermediate tergite or with a pair of setae on the male second genital sternite usually show these characters at the stage of development reached by the above specimen, so it can be assumed that they are absent in *L. sexustumidus*.

DESCRIPTION OF IMMATURE FEMALE

Size: 7·6 mm. long and 0·85 mm. broad at T. 8 and 10 which are the same breadth.

Head: 0·74 mm. broad.

Antennae: of 32 articles.

Ocelli: as in immature male.

Coxal pores: 1, 2, 2, 2.

14th and 15th legs: slightly thickened as in immature male, 15th 2·0 mm. long.

Gonopod: with a single slender acuminate spur, and the claw with a spiniform lateral denticle; ventral protrusion of second article very feeble.

Spinulation: VpF starts on 13, VaT on 10, DpF on 3 and DpT on 7; DpP is present on one first leg only and absent from 2 to 10; otherwise as in adults with 15 VaC present and 15 DaP absent.

DISCUSSION

Meinert (1872) recorded *L. erythrocephalus* from Sevilla. The only specimens in the Meinert Collection in the Copenhagen Zoological Museum on which Meinert might have based this record are in a tube labelled «*Lithobius erythrocephalus* Koch Bona Hispana». Owing to Meinert's system of labelling (see Eason, 1974:2) it cannot be said which of these specimens came from Spain and which from Bône in Algeria, but they have all been re-examined by one of the authors (E.H.E.) and, apart from a *stadium agenitalis* of *Lithobius castaneus* Newport, they all belong either to *Lithobius lapidicola* Meinert or to *Lithobius lusitanus* Verhoeff and none to *L. erythrocephalus*, so that Meinert's record of *erythrocephalus* from Sevilla can be dismissed as due to misdetermination.

Brölemann (1920) recorded two males of *L. erythrocephalus* from Pozuelo de Calatrava (Ciudad Real). Although he gave no description this author remarked on the doubt attaching to his determination. Brölemann was a very accurate worker and, since there are no other known Iberian species of *Lithobius* whose males closely resemble those of *erythrocephalus*, it seems possible that these two specimens belonged to *L. sexustumidus*. Attems (1927) repeated Meinert's record of *L. erythrocephalus* from Sevilla and added one from Calatrava: the same author later recorded this species from the neighbourhood of Madrid (Attems, 1952). But both these records of Attems should be treated with reserve and the presence of *L. erythrocephalus* in the Iberian Peninsula has yet to be established.

L. sexustumidus differs from *L. erythrocephalus* in its smaller size, fewer ocelli, fewer and smaller coxal pores, more numerous antennal articles and, most notably, in the relatively impoverished spinulation of the legs and the structure of the female gonopod which, in *erythrocephalus*, is without the swelling of the second article and has a distinctly tridentate claw. On the other hand *L. sexustumidus* seems to be close to *Lithobius taurinensis* Matic & Darabantzu, 1971, which was based on a male and two females from the neighbourhood of Turin (Italy). *L. taurinensis* is closer to *sexustumidus* in most of its characters, including spinulation, than is *erythrocephalus* and the figure of the female gonopod of *taurinensis* (Matic & Darabantzu, 1971: fig. 5c) suggests a ventral expansion of the second article such as is found in *sexustumidus* (Fig. e). But *taurinensis* is described as having distinct posterior projections on T.11 and 13, a small medial denticle on the female genital claw and the lateral spur of the gonopod is figured with a marked subdistal expansion (Matic & Darabantzu, 1971: fig. 5d).

The relative status of *L. sexustumidus* and *L. taurinensis* can only be decided when more examples of both forms have been examined, and they may be no more than subspecifically distinct. But in the meantime it seems better to regard them as separate species.

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Resumen

En el presente trabajo se reexaminan cuatro ejemplares de *Lithobius*, provenientes de Huesca (España), que anteriormente habían sido determinados como *Lithobius erythrocephalus*, aun a pesar de que presentaban ciertas diferencias respecto a esta especie. Estas diferencias han ocasionado que finalmente se considere que los citados especímenes pertenecen a una nueva especie, *Lithobius sexustumidus*, próxima a aquella y a *Lithobius taurinensis*.

En la discusión de la nueva especie se demuestra que la mayoría de las citas de *Lithobius erythrocephalus* para la Península Ibérica son erróneas, por lo que la presencia de esta especie en dicha Península debe ser aun demostrada.

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